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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/820,477

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Jesse Sandoval

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LSI LOGIC CORPORATION

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EXAMINER

LEVITAN, DMITRY

ART UNIT

PAPER NUMBER

2662

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/820,477

Applicant(s)

SANDOVAL, JESSE

Examiner

Dmitry Levitan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 7 and 8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification does not provide sufficient details to enable a skilled in the art to make and use the invention because it does not adequately describe the following:

Regarding claim 7, how to discard data packets in accordance with a probabilistic test, based on priority. The disclosure, does not define criteria on discarding packets based on priority.

Regarding claim 8, how to discard data packets in accordance with a probabilistic test, based on volume rate. The disclosure, does not define criteria on discarding packets based on volume rate.

The specification does not provide enough details about the structure and operation of the elements associated with the above identified claimed features to enable one skilled in the art to make and use the invention without undue experimentation.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3, 9, 11-13, 16 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Silbershatz (US 6,556,578).

5. Regarding claims 1, 11 and 17, Silbershatz teaches a circuit and a method comprising:

A buffer for storing data packets (buffer 20 on Fig. 1A and 3:36-52. For the simplicity only,

Examiner considers buffer 20 contains only one queue 23); and

A test circuit configured to

a) monitor a number of packets in the buffer (determine global average queue occupancy, step 32 on Fig. 2a and 4:6-26),

b) permit an additional packet to the buffer, if the number of packets in the buffer less than a first threshold (when the queue occupancy less than min threshold, step 38, not dropping the packet, step 44 on Fig. 2A and 4:38-39),

c) discard additional data packet in accordance with a probabilistic test responsive to said number being greater than the first threshold (computing packet drop probability, steps 40 and 42, and discarding the packet on the test YES result, step 36, 4:31-39).

In addition, regarding claims 1 and 17, Silbershatz teaches means for monitoring, permitting and discarding the packets (inherently part of gateway 10 on Fig. 1A, because the gateway performs all the function described above).

6. Regarding claims 2 and 12, Silbershatz teaches discarding additional data packets when the number is as great as a second threshold (when the queue occupancy is larger than max threshold, step 34 on Fig. 2A and 4:26-29).

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7. Regarding claims 3 and 13, Silbershatz teaches an identification signal identifying the additional data packet as discarded (inherently part of the system, because Silbershatz teaches generating packet drop indication pa, step 40 Fig. 2A and 4:32-35).

8. Regarding claims 9 and 16, Silbershatz teaches time averaging the data packets in the buffer (average queue occupancy 4:11-19).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silbershantz in view of Skirmont (US 6,252,848).

Silbershantz teaches all the limitations of claim 1.

Silbershantz does not teach probabilistic test based on precedence, priority or volume rate.

Skirmont teaches probabilistic test based on precedence (IP precedence 2:28-34, priority (priority for a preferred user 2:34-41) or volume rate (out of profile flow 2:42-50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add probabilistic test based on precedence, priority or volume rate of Skirmont to the system of Silbershantz to improve the system performance by adjusting the packets dropping to meet different system requirements.

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11. Claims 4, 5, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silbershatz in view of Ikeda (US 5,719,853).

Silbershatz teaches all the limitations of claims 1 and 11.

Silbershatz does not teach presenting a rate signal in a first condition when the number is greater than the first threshold and in second condition when the number is less the threshold.

Ikeda teaches presenting a rate signal in a first condition when the number is greater than the first threshold and in second condition when the number is less the threshold (presenting proper backpressure control signal to control the source transmission rate depending on the queue length, measured by four thresholds Fig. 1 and 3:57-67, 4:1-16).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a rate signal in a first condition when the number is greater than the first threshold and in second condition when the number is less the threshold of Ikeda in the system of Silbershatz to improve the system congestion control.

12. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silbershatz in view of Ikeda.

Silbershatz teaches all the limitations of parent claims 1 and 9, including:

Discarding additional data packets when the number is as great as a second threshold (when the queue occupancy is larger than max threshold, step 34 on Fig. 2A and 4:26-29);

Presenting identification signal identifying the additional data packet as discarded (inherently part of the system, because Silbershatz teaches generating packet drop indication pa, step 40 Fig. 2A and 4:32-35).

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Silbershatz does not teach presenting a rate signal in a first condition when the number is greater than the first threshold and in second condition when the number is less the threshold.

Ikeda teaches presenting a rate signal in a first condition when the number is greater than the first threshold and in second condition when the number is less the threshold (presenting proper backpressure control signal to control the source transmission rate depending on the queue length, measured by four thresholds Fig. 1 and 3:57-67, 4:1-16).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a rate signal in a first condition when the number is greater than the first threshold and in second condition when the number is less the threshold of Ikeda in the system of Silbershatz to improve the system congestion control.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bechtolsheim	US006515963B1	Per-flow dynamic buffer management.
Lyon	US006333917B1	Method and apparatus for RED and enhancements.
Corbalis	US005359592A	Bandwidth and congestion control for queue channels.
Knobel	US006765871B1	Fiber channel flow control method and apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is (571) 272-3093. The examiner can normally be reached on 8:30 to 4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Dmitry Levitan
Patent Examiner.
10/21/04



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